



January 22, 2004

To: Commissioner for Patents
P.O.Box 1450
Alexandria, VA 22313-1450

Fr: George O. Saile, Reg. No. 19,572
28 Davis Avenue
Poughkeepsie, N.Y. 12603

Subject: | Serial No. 10/706,382 11/12/03 |
Wen-Jui Fu et al.

A NOVEL METHOD TO REDUCE THE
FLUORINE CONTAMINATION ON THE
AL/AL-CU PAD BY A POST HIGH CATHODE
TEMPERATURE PLASMA TREATMENT

INFORMATION DISCLOSURE STATEMENT

Enclosed is Form PTO-1449, Information Disclosure Citation
In An Application.

The following Patents and/or Publications are submitted to
comply with the duty of disclosure under CFR 1.97-1.99 and
37 CFR 1.56.

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being
deposited with the United States Postal Service as first class
mail in an envelope addressed to: Commissioner for Patents,
P.O. Box 1450, Alexandria, VA 22313-1450, on January 27, 2004.

Stephen B. Ackerman, Reg.# 37761

Signature/Date

A handwritten signature of "Stephen B. Ackerman" is written over the date "1/27/04".

U.S. Patent 6,162,733 to Obeng, "Method for Removing Contaminants from Integrated Circuits," teaches a method to remove alkali metal and halogen-based contaminants from an integrated circuit device.

U.S. Patent 6,063,207 to Yu et al., "Surface Treatment for Bonding Pad," discloses etching a bonding pad opening using a fluorine based plasma.

U.S. Patent 5,824,234 to Jou et al., "Method for Forming Low Contact Resistance Bonding Pad," describes a bonding pad method.

U.S. Patent 5,380,401 to Jones et al., "Method to Remove Fluorine Residues from Bond Pads," teaches a method to remove fluorine contamination from bonding pads.

U.S. Patent 5,970,376 to Chen, "Post Via Etch Plasma Treatment Method for Forming with Attenuated Lateral Etching a Residue Free Via Through a Silsequioxane Spin-On-Glass (SOG) Dielectric Layer," discloses a method to remove a fluorocarbon polymer from a wafer surface using an inert gas plasma.

U.S. Patent 5,755,891 to Lo et al., "Method for Post-etching of Metal Patterns," discloses a method to treat after metal etch.

U.S. Patent 5,770,098 to Araki et al., "Etching Process," describes a plasma etching process.

U.S. Patent 5,942,446 to Chen et al., "Fluorocarbon Polymer Layer Deposition Predominant Pre-Etch Plasma Etch Method for Forming Patterned Silicon Containing Dielectric Layer," discloses a method of patterning a silicon-containing layer using plasma etching.

U.S. Patent 5,776,832 to Hsieh et al., "Anti-corrosion Etch Process for Etching Metal Interconnections Extending Over and Within Contact Openings," teaches a method to prevent corrosion of metal lines by performing an O₂ ashing step after etching metal lines with BC₁₃ or with Cl₂.

U.S. Patent 6,136,680 to Lai et al., "Methods to Improve Copper-fluorinated Silica Glass Interconnects," describes methods to process fluorinated silicate glass (FSG) film by performing plasma treatments using N₂, NH₃, O₂, or N₂O or by performing Ar sputtering.

U.S. Patent 5,854,134 to Lan et al., "Passivation Layer for a Metal Film to Prevent Metal Corrosion," teaches performing a plasma treatment on a metal layer using a fluorine containing plasma to thereby form a thin polymeric passivation layer on the metal.

TSMC-99-431/909

U.S. Patent 5,731,243 to Peng et al., "Method of Cleaning Residue on a Semiconductor Wafer Bonding Pad," discloses a method to remove residue from a bonding pad using a dip in a solution comprising DMDO and MEA followed by an oxygen plasma treatment.

Sincerely,

A handwritten signature in black ink, appearing to read "S. B. Ackerman".

Stephen B. Ackerman,
Reg. No. 37761

Form PTO-1449



1 P A INFORMATION DISCLOSURE CITATION
IN AN APPLICATION
JAN 29 2004 (Use several sheets if necessary)

| | | | |
|----------------------------|-------------------|--------------------|-------------|
| Document Number (Optional) | TS MC-99-431/909 | Application Number | 10/706, 382 |
| Applicant | Wen-Jui Fu et al. | | |
| Filing Date | 11/12/03 | Group Art Unit | |

U. S. PATENT DOCUMENTS

| EXAMINER INITIAL | DOCUMENT NUMBER | DATE | NAME | CLASS | SUBCLASS | PUBLISH DATE & APPROXIMATE |
|------------------|-----------------|----------|--------------|-------|----------|-------------------------------|
| | 6162733 | 12/19/00 | Obeng | 438 | 706 | 1/15/99 |
| | 60632075 | 16/00 | Yu et al. | 134 | 2 | 2/1/99 |
| | 5824234 | 10/20/98 | Jou et al. | 216 | 18 | 10/2/98 |
| | 5380401 | 1/10/95 | Jones et al. | 156 | 665 | 1/14/93 |
| | 5970376 | 10/19/99 | Chen | 438 | 637 | 12/29/97 |
| | 5755891 | 5/26/98 | Lo et al. | 134 | 1.2 | 1/24/97 |
| | 57700986 | 6/23/98 | Araki et al. | 216 | 67 | 3/16/94 |
| | 59424468 | 24/99 | Chen et al. | 438 | 734 | 9/12/97 |
| | 57768327 | 7/7/98 | Hsieh et al. | 438 | 669 | 7/17/96 |
| | 6136680 | 10/24/00 | Lai et al. | 438 | 597 | 1/21/00 |
| | 5854134 | 12/29/98 | Lan et al. | 438 | 695 | 5/15/97 |

FOREIGN PATENT DOCUMENTS

| | DOCUMENT NUMBER | DATE | COUNTRY | CLASS | SUBCLASS | Translation | |
|--|-----------------|------|---------|-------|----------|-------------|----|
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OTHER DOCUMENTS (Including Author, Title, Date, Page No., Etc.)

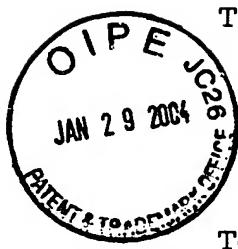
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EXAMINER

DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the applicant.

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ASSOCIATE POWER OF ATTORNEY

I hereby appoint Doug Schnabel, registration number 47,927, as my associate attorney in this case. His telephone number is (517) 686-3462.

Please continue to direct all correspondence in this case to the undersigned attorney.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "SBA".
Stephen B. Ackerman,

Principal attorney of record